

Sandwich Data

Reporting Category Probability and Statistics

Topic Interpreting data from a variety of graphs

Materials

- Sandwich Data 1 and Sandwich Data 2 handouts (attached)

Vocabulary

data, tally table, tally mark, chart, survey, bar graph, line graph, circle or pie graph, line plot

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

1. Divide the class into two groups, placing one at the front of the classroom and the other at the back. Distribute the Sandwich Data 1 handout to the group at the front and the Sandwich Data 2 handout to the group at the back. When distributing, place the handouts face down on the desks, and instruct students not to turn the papers over yet.
2. Tell students that you are going to ask some questions about sandwiches, that the answers are contained in the information on the handout, and that you are going to keep track of those who raise their hands first to answer the questions. Give a signal for students to turn their papers over; begin asking questions (see below). Call on the first student who raises his/her hand to answer the question. Keep a record of those who answer first, anticipating that those who have the data in graphical form will respond first.
 - What kind of sandwich was preferred by the most people?
 - What kinds of sandwiches were preferred by only two people?
 - What kind of sandwich did Oliver prefer?
3. After establishing that students in one group did better than those in the other, reveal that the handouts were not the same. Display both handouts for the class to see, and explain that this is an example of the importance of the *way* statistical data or information is presented. Distribute the alternate handouts so that each student has a copy of both.
4. Lead the students in a discussion of the reasons one handout is quicker to read and easier to understand than the other. They should conclude that the data in the bar graph is quicker to read and easier to understand than the data in the narrative because the bar graph groups and categorizes the important information simply and clearly.
5. Instruct students to summarize this activity in their math journals.

Assessment

- **Questions**
 - In this bar graph, what are the important parts?
 - Could this data be displayed on other types of graphs, such as line, circle or pie, line plot, or picture? Why, or why not?

- **Journal/Writing Prompts**

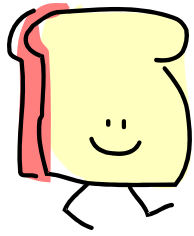
- Create your own bar graph to display the same information on the handout, including your own sandwich choice. You may choose to turn the graph horizontally, use bars instead of boxes with student names, and/or give the graph a different but still appropriate name. The information must be appropriately displayed with all graph requirements included. Then, write two questions that can be answered by reading your graph.
- Identify where we typically find graphs. Make a list of locations, and explain some purposes of these graphs.

Extensions and Connections (for all students)

- Have students work individually or in groups of two or three to collect data on topics of their choice (e.g., favorite sandwich choice, favorite fast food restaurant, favorite ice cream flavor, favorite after school activity). Have them first organize the data they collect by using tally tables or charts. Then, have them create appropriate bar graphs to display the organized data. Instruct them to write two or more questions that can be answered by reading the graphs.
- Challenge students to find different types of graphs (e.g., bar, line, circle or pie) in magazines, newspapers and various other publications. Have them create a poster or display of the graphs they find and write an explanation of the use of each one under it.
- Provide pairs of students with graphs from newspapers, magazines, and textbooks for them to use in discussing the various ways such information is displayed and the advantages of each.

Strategies for Differentiation

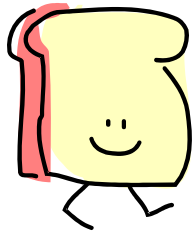
- Ensure that groups of students include fluent readers in addition to the slower readers.
- Allow students to draw pictures instead of writing in their journals to summarize this activity.



Sandwich Data 1

The Lunch Bunch's Favorites

Laura liked peanut butter and jelly. Kenny liked plain jelly. Oliver also liked plain jelly. Kate and David liked plain peanut butter. Oh, I forgot to mention that Steve, Isabel, and Sam also preferred peanut butter and jelly. Kristen liked peanut butter and fluff. Mariko liked plain fluff, while Sally and Ty liked jelly and fluff.



Sandwich Data 2

The Lunch Bunch's Favorites

